



# **MISSOURI CANCER ACTION PLAN 2021-2025**

**September 2021** (revised October 2022)

## INTRODUCTION

The Missouri Cancer Action Plan 2021-2025 was created for all Missourians to use as a guide for cancer control and prevention work across the state. It reflects priorities to reduce the human and economic burden of cancer on Missourians through the promotion of collaborative, innovative, effective programs and policies. The Missouri Cancer Action Plan places health equity, racial bias, and elimination of discrimination at the forefront of all activities, including planning, coalition-building, service delivery, community mobilization, and policy advocacy.

The Missouri Cancer Action Plan has **4 main goals** with **28 objectives**:

1. Diagnose Cancer Very Early
2. Empower Patients to Drive Health Care Decisions
3. Enhance Survivor Quality of Life
4. Prevent Cancer's Disruption of Human Life

## PLANNING PROCESS

During the summer of 2021, the Missouri Department of Health and Senior Services (DHSS) collaborated with leaders of the Missouri Cancer Consortium to review and update the existing plan, which was published in 2016. Since the COVID-19 pandemic constrained options and availability of people to participate in planning activities, DHSS initiated a multi-year process to build the Missouri Cancer Action Plan. This first step involved development of goals and objectives around which stakeholders could build consensus and align established or new projects. Most of the included metrics (with baseline and target measures) were drawn from the 2016-2020 version and updated wherever possible.

## ONGOING DEVELOPMENT WITH HEALTH EQUITY FOCUS

This version of the Missouri Cancer Action Plan reflects the planning and priorities as of September 2021. The Missouri Cancer Consortium and Missouri Department of Health and Senior Services are committed to refining and refreshing the plan and releasing updated publications in 2022 and 2024. Over the next few years, the Missouri Cancer Action Plan will be enhanced with additional metrics and new objectives defined by workgroups and collaborations of stakeholders from the cancer community, including patients, advocacy organizations, medical care experts, public health agencies, pharma/biotechnology companies, and more. The MCC works to reduce the cancer disparities in cancer screening, treatment, and survival, paying particular attention to those with a higher cancer burden such as the uninsured, African Americans, and those living in rural parts of the state. According to the US Census, African Americans make up 11.4% of Missouri's population, and they experience cancer-related deaths at a rate of 239.8 per 100,000, compared to 197.3 per 100,000 for White Missourians (American Cancer Society). Only 59 % of rural survivors, compared to 76% of urban survivors, report receiving advice and follow-up care (2016 MO county-level study). Of all cancer survivors, approximately 30% live in rural counties. Missourians with cancer who live in rural areas are more likely to have higher rates of poor self-reported health, physical distress, activity limitation, and smoking, per a 2013 study published in Preventing Chronic Disease by authors from Saint Louis University College for Public Health and Social Justice.

## GRANT SUPPORT

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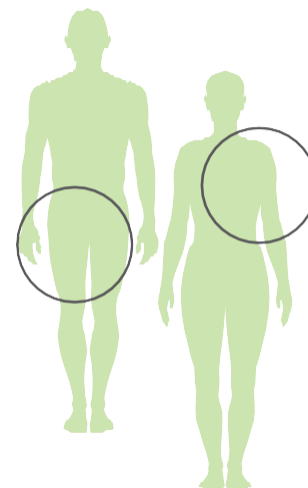
# 1

## Diagnose Cancer Very Early

**Goal:** Ensure all Missourians, especially individuals at higher risk due to social determinants, have access to high-quality screening, genetic counseling, and clinical services for early detection and diagnosis of cancer.

### Objectives:

1. Increase the percentage of colorectal cancer screenings for adults 45 and over.
2. Increase the percentage of women who receive regular breast cancer screening based on nationally recognized guidelines.
3. Increase proportion of lung, melanoma, ovarian, cervical, and prostate cancer cases identified at early stages.
4. Increase informed decision-making about and access to genetic testing and counseling among moderate- and high-risk individuals.
5. Increase insurance coverage and benefits that provide adequate/comprehensive access to evidence-based early detection services/technologies.



### Select Indicators of Progress and Targets:

Metric	Source	Baseline	2025 Target
Women 40 and older who had a mammogram within the past two years	BRFSS (2020)	69.4%	79%
Women 21 – 65 years old who received a Pap test within the last three years	BRFSS (2020)	78.2%	93%
Missourians 45-75 years old who had a colonoscopy in the last 10 years	BRFSS (2020)	66.4%	80%
Missourians ages 55-80 with a history of smoking who had computed tomography scan for lung cancer	BRFSS (2019)	5.6%	15%
Invasive female breast cancer (per 100,000) Black African American, White, All	Cancer Registry MICA (2019)	126.8, 138.7, 137.4	114, 125, 124
Invasive colon cancer incidence (per 100,000)	Cancer Registry MICA (2019)	27.2	25
Females with a family history of cancer who receive genetic counseling for hereditary breast and/or ovarian cancer based on the most recent guidelines	Under development by the Healthy People 2030 Cancer Workgroup		

# Diagnose Cancer Very Early (continued)

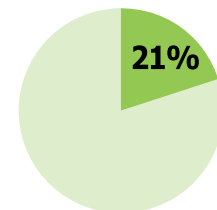
## Background

Each type of cancer has recommendations for when to start screening and how often, and these recommendations may differ between professional organizations. Some individuals at higher risk may require earlier and more frequent screening, and should therefore discuss screening recommendations with their doctor. The following guidance is based upon recommendations by the U.S Preventive Services Task Force (USPSTF).

**Lung Cancer.** Lung cancer is the second most common cancer, but is the leading cause of cancer mortality in the U.S., with a relative five-year survival rate of just 21%. The National Lung Screening Trial compared two methods of detecting lung cancer: low-dose spiral computed tomography (LDCT) and standard chest X-rays. Both techniques have been used as a means to find lung cancer early, but the effects of these techniques on lung cancer mortality rates had not been determined definitively. This study found that the LDCT significantly reduced lung cancer mortality by 20% among high-risk individuals. The USPSTF recommends annual screening for lung cancer with the LDCT for people with a 30 or more pack-per-year history of smoking, are currently smoking, or have quit within the past 15 years.

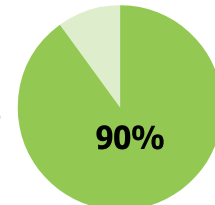
- **For more information, visit <http://uspreventiveservicestaskforce.org/BrowseRec/Search?s=lung+cancer>**

**Lung Cancer**  
5-year survival rate



**Breast Cancer.** Breast cancer is the most common cancer among women in the United States. The 5-year survival rate for breast cancer is 90%, but survival is highest when the cancer is caught early and has not spread to other parts of the body. Early diagnosis of breast cancer significantly reduces the risk of dying from breast cancer, but because breast cancer often has no symptoms in its early stages, the best way to catch breast cancer early is through mammography screening. Mammography is an X-ray of the breast tissue. Breast cancer risk is increased for Black or African-American women, as well as transgender individuals. Transgender female are also at an increased risk of breast cancer compared to males due to hormone use. Current USPSTF recommendations suggest women over the age of 50 should receive annual mammograms biennial to catch breast cancer at its earliest, most treatable stages.

**Breast Cancer**  
5-year survival rate

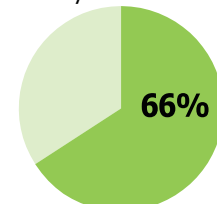


The 2018 Behavioral Risk Factor Surveillance System (BRFSS) data found that 69.4% of women ages 40 and over and 75.2% of women ages 50-74 reported having a mammogram within the past two years. A new emerging technology, three-dimensional (3D) mammography, also known as digital breast tomosynthesis, is similar to conventional mammography, but many more pictures of the breast are taken at various angles to produce a 3D image during a regular mammogram. The 3D mammography has been found to detect more invasive cancers and reduce recall rates compared to regular 2D digital or film mammograms, but the full benefits and economical-personal costs remain largely unknown.

- **For more information, visit <http://www.cdc.gov/cancer/breast/index.htm>**

**Cervical Cancer.** An estimated 14,100 individuals will be diagnosed with cervical cancer in 2022, and the 5-year survival rate is 66%. All people with a cervix are at risk for cervical cancer, but the majority (90%) of cases are caused by the human papillomavirus (HPV). HPV vaccination can significantly reduce risk of cervical cancer although rates of vaccinations are still quite low. In 2019, only 57% of girls and 52% of boys ages 13-17 were up to date with their HPV vaccinations. Screenings can also prevent cervical cancer by detecting precancerous lesions, allowing these lesions to be treated before they have the chance to develop into cancer.

**Cervical Cancer**  
5-year survival rate



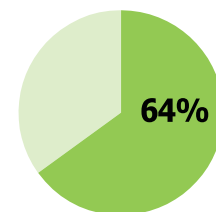


The USPSTF recommends screening for cervical cancer every 3 years with cervical cytology alone in women aged 21 to 29 years. currently two main screening tests for cervical cancer: Pap test and HPV test. The Pap test can be used to screen women for cervical cancer by finding abnormal cells in the cervix which may turn into cancer. For women aged 30 to 65 years, the USPSTF recommends screening every 3 years with cervical cytology alone, every 5 years with high-risk human papillomavirus (hrHPV) testing alone, or every 5 years with hrHPV testing in combination with cytology (cotesting). There are currently two main screening tests for cervical cancer: Pap test and HPV test. The Pap test can be used to screen for cervical cancer by finding abnormal cells in the cervix which may turn into cancer. The 2018 BRFSS data found that 64.3% of females reported having a Pap test within the past 3 years. The HPV test detects the virus that causes these changes in the cells. Either test can be performed in a clinic or doctor's office. When cervical cancer is diagnosed at early stage, it is highly treatable and associated with high survival rates. In fact, mortality rates for cervical cancer have dropped by more than half since the 1970s due to early detection through cervical cancer screening.

• **For more information, visit [www.cdc.gov/cancer/cervical/basic\\_info/screening.htm](http://www.cdc.gov/cancer/cervical/basic_info/screening.htm)**

**Colorectal (Colon) Cancer.** Colorectal cancer almost always develops from precancerous polyps (abnormal growths) in the colon or rectum. Screening tests can prevent colorectal cancer by detecting and removing precancerous polyps or by catching cancer at an early stage. The 5-year survival rate for colorectal cancer is 65%, but only 38% of patients are diagnosed with localized disease. When screening finds colorectal cancer early, when treatment works best, the 5-year survival rate is 90%. The USPSTF recommends adults ages 45 to 75 be screened for colorectal cancer. The 2018 BRFSS shows 51.5% of adults age 50-54, 73% of adults age 55-64, and 82.7% of adults age 65-75 reported having a sigmoidoscopy or colonoscopy, and 11.6% of adults age 50-74 had a home blood stool test within past two years.

**Colorectal (Colon) Cancer**  
5-year survival rate

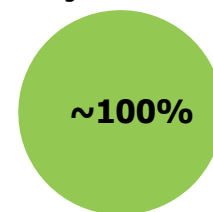


Colonoscopy is the gold standard screening for colon cancer; however, there are other effective tests that are less invasive and require less preparation than a colonoscopy. Other options include the fecal immunochemical tests, or FIT, approved by the Food and Drug Administration; guaiac- based fecal occult blood tests (gFOBT); flexible sigmoidoscopy (only examines the lower one-third of the colon); computed tomography (CT) colonography or virtual colonoscopy; double contrast barium enema; and the newest DNA stool test called Cologuard.

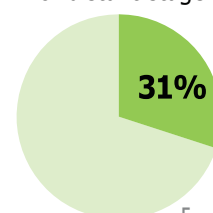
• **For more information, visit [www.cdc.gov/cancer/colorectal/basic\\_info/screening/tests.htm](http://www.cdc.gov/cancer/colorectal/basic_info/screening/tests.htm)**

**Prostate Cancer.** The CDC supports informed decision making regarding prostate cancer screening that occurs when a person understands the nature and risk of prostate cancer, understands the risks and benefits of screening and alternatives to screening, participates in the decision to be screened, or not, at a level he desires, and makes a decision consistent with his preferences and values.<sup>37</sup> Men are at greater risk for developing prostate cancer if they are African-American, Caribbean, and/or have a father, brother or son who has had prostate cancer.<sup>36</sup> Age is also a risk factor, and increases at age 50. . In 2018, the USPSTF recommended that people with a prostate ages 55 to 69 years of age may decide to be screened for prostate cancer with the prostate specific antigen (PSA) test. The 2018 BRFSS data found that among men age 40 and older, only 32.1% had a PSA test in the past two years, down from 43.2% in 2016. The 5-year survival for the majority of men diagnosed with local or regional prostate cancer is nearly 100%, but drops to 31% for those diagnosed with distant-stage disease. Thus, for people at high risk of prostate cancer, screening may significantly improve their chance to be diagnosed before the prostate cancer has spread.

**Prostate Cancer**  
5-year survival rate  
for local or regional  
stage of disease



5-year survival rate  
for distant-stage



• **For more information, see <https://www.cdc.gov/cancer/prostate/index.htm>**

## 2

## Empower Patients to Drive Health Care Decisions

**Goal:** Ensure that all Missourians have access to and utilize high-quality medical and palliative care that is culturally-appropriate and personalized to meet patient preferences and needs.

### Objectives:

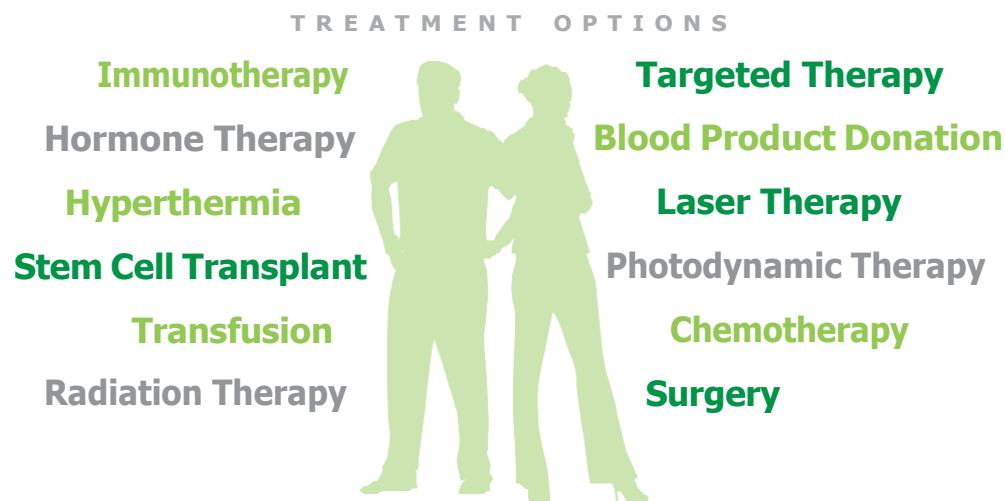
6. Increase the proportion of Missourians who receive accurate, evidence-based information about cancer treatment options.
7. Increase adherence to evidence-based standards of care.
8. Increase regular assessment of and health care provider support of mental health needs.
9. Increase capacity of cancer care navigation services available for all ages across Missouri.
10. Increase diversity and participation in clinical trials.
11. Increase access to guideline-indicated biomarker testing and precision medicine treatments, especially for people living in rural communities.
12. Increase the number of programs led by community-based organizations to address local needs for cancer prevention, treatment, or survivorship.
13. Increase the number of updated advance care planning documents.
14. Increase use of public health surveillance and health system medical record data to inform decision-making about cancer service locations and quality improvement.

### Select Indicators of Progress and Targets:

Metric	Source	Baseline	2025 Target
Increase the percentage of survivors reporting receipt of a written treatment summary	BRFSS (2020)	41.9%	46%
Survivors who had health insurance pay for all or part of their cancer treatment	BRFSS (2020)	96.4%	99%
Percentage of patients enrolled in clinical trials for cancer treatment	BRFSS (2020)	4.1%	7%
Percent of cancer patients receiving treatment within 30 days of diagnosis (lung and bronchus)	Missouri Cancer Registry (2019)	34.2%	49.4%
Missouri adults, age 18-64, without health insurance	BRFSS (2021)	12.2%	10%
Missouri adults, age 18-64, who were unable to see a doctor due to cost	BRFSS (2021)	13.8%	10%
Count of care navigators employed by cancer treatment centers	TBD	TBD	TBD
Count of community-based organizations that receive grant funding for cancer prevention, treatment or survivorship programs.	DHSS	TBD	TBD
Persons who are counseled or engaged in shared decision-making with their providers for clinical services to prevent cancer	Under development by the Healthy People 2030 Cancer Workgroup		

## Background

There are many treatment options for cancer. The desired outcome of these treatments is to cure the cancer; however, in cases where this is not possible, the goal often becomes to reverse, slow or halt the progression of the disease. While some individuals will only receive a single type of treatment, combination therapy is far more common. The type(s) of treatment that one receives is dependent on a multitude of factors such as the specific type and current stage of the cancer, the general health of the patient and the patient's personal preference. Conventional treatments include: surgery, radiation therapy, chemotherapy, immunotherapy, targeted therapy, hormone therapy, stem cell transplant, hyperthermia, photodynamic therapy, blood product donation, and transfusion and laser therapy, any of which can serve as the primary or an adjuvant treatment. Additionally, there are several palliative treatment options available for the relief of side effects of the cancer itself or that are secondary to the aforementioned therapies. The National Cancer Institute provides evidence-based physician data query information for many complementary and alternative medicine therapies for patients and health professionals.



**Cancer treatment is improving** – saving lives and extending survival for different types of cancer, including breast and colon, and for people with leukemias, lymphomas and pediatric cancers. The ultimate measure of success against cancer is quality of life years gained. Access to quality cancer care and clinical trials is important to ensure that everyone is provided with state-of-the-art treatment.

**Clinical trials are the major avenue for discovering, developing and evaluating new therapies.** However, only about 4.1% of all adult cancer patients in Missouri had participated in a clinical trial, according to the 2020 Behavioral Risk Factor Surveillance System data. Furthermore, studies have repeatedly demonstrated that members of racial-ethnic minority groups and those from lower income households are less likely to receive treatments or participate in clinical trials. In recent years, several legislative acts and bills, such as the Henrietta Lacks Enhancing Cancer Research Act and the Right to Try Act, have been enacted in order to improve patient accessibility to clinical trials and other experimental treatments. Together, these data highlight the importance of increasing physician and patient awareness of and accessibility to clinical trials, which will help achieve the goals of I) testing new treatments more rapidly, II) finding more effective treatments, and III) broadening treatment options available to patients.

# 3

## Enhance Survivor Quality of Life

**Goal:** Improve the quality of life for cancer survivors across physical, emotional, social and vocational domains

### Objectives:

15. Increase the delivery of comprehensive, individualized survivorship care plans including use of peer support groups to include children cancer survivors
16. Increase patient satisfaction with physical and mental health symptom management during and after treatment.
17. Increase resources and services that equip patients to direct end-of-life care.
18. Increase the proportion of cancer patients who use rehabilitation services to reduce or prevent long-term and late effects.
19. Increase capacity to collect, analyze, and report data related to quality of life of cancer survivors.

### Select Indicators of Progress and Targets:

Metric	Source	Baseline*	2025 Target
Mortality rate, all cancer (per 100,000) age-adjusted to 2000 population	American Cancer Society (2015-2019)	166.3	150
Cancer survivors receiving information or a written survivor care plan	BRFSS (2020)	79.3%	80%
Adults aged 18 years and older diagnosed with cancer who reported being kept from usual activities due to poor physical or mental health (on 14 or more days of the past 30 days)	BRFSS (2021)	51.1%	45%
Currently have physical pain caused by cancer or cancer treatment	BFRSS (2020)	10.9%	5%
Emotionally unhealthy for ≥ 14 days in past 30 days	BRFSS (2020)	14.7%	TBD
Average number of hospice days per cancer patient in Missouri during the last month of life	Dartmouth Atlas of Health Care (2012)	9	13
Increase the mental and physical health-related quality of life of cancer survivors	Under research by the Healthy People 2030 Cancer Workgroup		



## Background

Due to advances in the early detection and treatment of cancer, people are living many years after a diagnosis. However, disparities in health care impact survival. Low-income people who have inadequate or no health insurance coverage are more likely to be diagnosed with cancer at a later stage, often reducing survival time. For the over 500,000 adult cancer survivors living in Missouri, access to resources and supports that address physical, emotional, social, spiritual

and financial challenges due to a cancer diagnosis and treatment is critical to long-term recovery and quality of life. Public health professionals strive to address survivorship and quality of life issues, such as the coordination of care, patient-provider communication, palliative care, pain management and fertility preservation. In light of these concerns, public health initiatives aimed at understanding and preventing secondary disease, recurrence and the long-term effects of treatment are essential. Cancer changes a person's health care needs forever, and the National Coalition for Cancer Survivorship recommends **every person with cancer should receive written care plans and summaries that follow them from the time they are diagnosed through all the years of survivorship.** Although the Survivorship Care Plan (SCP) is a useful tool for patients and primary care physicians, more work is needed regarding care coordination and provider roles. In addition, future challenges involve the need for adequate reimbursement for creation and delivery of SCPs, as well as outcome studies to measure how well SCPs improve patient outcomes.



## 4

# Prevent Cancer's Disruption of Human Life

**Goal:** Reduce all Missourians' risk of cancers associated with health behaviors and environmental carcinogens.

## Objectives:

20. Increase the percentage of Missourians at healthy weight.
21. Increase the percentage of Missourians who exercise regularly.
22. Reduce the proportion of Missourians who use tobacco products, including electronic smoking products.
23. Reduce exposure to ultraviolet rays.
24. Reduce exposure to radon gas.
25. Increase the percentage of individuals ages 11 – 17 who receive the human papillomavirus (HPV) vaccine.
26. Increase the number of adult Missourians who know their family history of cancer.
27. Increase capacity to collect data and measure impact of digital media strategies on prevention-related health behaviors.
28. Increase funding for community health education, peer support services, and tobacco prevention and cessation services.

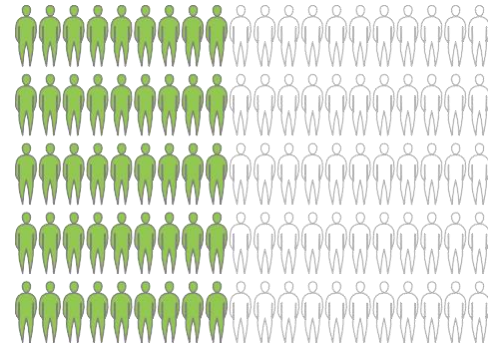
## Select Indicators of Progress and Targets:

Metric	Source	Baseline	2025 Target
Adult Missourians who use tobacco products	BRFSS (2021)	24.7%	16%
Youth in grades 9-12 who currently use tobacco products	YRBS (2019)	36.5%	33%
Adult Missourians who are overweight and obese	BRFSS (2021)	69.2%	60%
Adolescents, ages 13 to 17, who received $\geq 1$ the human papillomavirus (HPV) vaccine per CDC guidelines	CDC NIS-Teen (2020)	78.5% female 75.4% male	86% female 83% male
Adolescents, grades 9-12, who have had a sunburn in the past 12 months	YRBS (2019)	57.2%	52.2%

## Background

It is estimated that 42% of cancer cases and 45% of cancer deaths in the United States are linked to modifiable risk factors and are, therefore, preventable. These lifestyle risk factors include tobacco use, poor diet, alcohol, excess body weight, cancer-associated infections, UV radiation, and lack of exercise.<sup>15</sup> Furthermore, the risk of getting cancer can be reduced in a variety of ways, including eating healthy and keeping a healthy weight, avoiding tobacco, limiting alcohol consumption, protecting your skin from the sun, and getting recommended screenings.

**45%** of U.S. cancer deaths  
are linked to modifiable risk



**Lung cancer continues to be the leading cause of cancer death, and smoking causes 80% of lung cancer cases and deaths.** Compared to nonsmokers, men who smoke are about 23 times more likely to develop lung cancer and women who smoke are about 13 times more likely. Smoking causes about 90 percent of lung cancer deaths in men and almost 80 percent in women. Smoking can also cause cancer of the voice box (larynx), mouth and throat, esophagus, kidney, pancreas, cervix, bladder, colon, rectum and stomach, and causes acute myeloid leukemia. Adults who are exposed to secondhand smoke at home or at work increase their risk of developing lung cancer. Concentrations of many cancer-causing and toxic chemicals are greater in secondhand smoke than in the smoke inhaled by smokers. Although the exact links between what we eat (or don't eat) and some types of cancers are not yet clear, it has been estimated that one-third of all cancer cases in the U.S. are related to poor nutrition, being overweight or obese and physical inactivity, and could possibly be prevented. In addition, research has shown that being overweight or obese substantially raises a person's risk of getting endometrial (uterine), breast, prostate and colorectal cancers. Overweight is defined as a body mass index (BMI) of 25 to 29, and obesity is defined as a BMI of 30 or higher.

**Certain infectious agents (i.e., viruses, bacteria and parasites) can also cause cancer in infected people or increase the risk of developing cancer.** Human papillomavirus (HPV) cause up to 90% of cervical cancer and 70% of vaginal and vulvar cancer in females. HPV is also thought to cause 60% of penile cancer in males, and up to 91% of anal cancer cases in both sexes. Recent studies have also found that 60% to 70% of oropharyngeal cancers may be caused by HPV. HPV also causes anal cancer and oral cancers. Experts recommend that children ages 11 and 12 receive the HPV vaccine that prevents the infection, as well as anyone age 26 or younger who is not yet vaccinated. Hepatitis B and hepatitis C viruses can cause liver cancer. Experts recommend that individuals get vaccinated against hepatitis B and seek treatment if either virus is detected. Additional cancers may be related to other infectious agents. The best ways to prevent these cancers are by getting vaccinated, not having unprotected sex, not sharing needles and being tested and treated.

**Skin cancer is the most common form of cancer in the U.S.** Exposure to the sun's ultraviolet (UV) rays appears to be the most important environmental factor involved with developing skin cancer. To help prevent skin cancer while still having fun outdoors, seek shade, apply sunscreen regularly, and wear sun-protective clothing, a hat and sunglasses.



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